Amendments to the Claims

1. (Cancelled)

2. (Currently Amended) A high frequency sweep generator using a high frequency tunable oscillator having a coarse tune port and a fine tune port for producing a linear swept high frequency signal comprising: ~~The high frequency sweep generator as recited in claim 1 wherein the error correction generating means comprises:~~

means for digitally generating a controllable linear ramp sweep signal for coupling to the coarse tune port; and

means for generating from the swept high frequency signal an error correction signal for coupling to the fine tune port that compensates for non-linearities in the linear swept high frequency signal, the error correction generating means comprising:

a direct digital frequency synthesizer for generating a linear, frequency ramped sinusoid; and

a phase locked loop having as inputs the linear, frequency ramped sinusoid and the swept high frequency signal and producing as an output the error correction signal.

3. (Currently Amended) The high frequency sweep generator as recited in claim 2 ~~claims 1 or 2~~ wherein the controllable linear ramp sweep signal digital generating means comprises:

a programmable accumulator clocked by a sweep clock and having a sweep time increment as input to produce a sweep ramp signal during a sweep time and a retrace time increment as input to produce a retrace signal during a retrace time, the sweep ramp signal and retrace signal producing the controllable linear ramp sweep signal; and

means for controlling the sweep clock in response to a trigger signal to produce the controllable linear ramp sweep signal from the sweep ramp signal and the retrace signal.

4. (New) A high frequency sweep generator comprising:

a high frequency tunable oscillator having a coarse tune port and a fine tune port for producing a linear swept high frequency signal;

a digital sweep generator for generating a controllable linear ramp sweep signal for coupling to the coarse tune port of the high frequency tunable oscillator;

a divider for dividing the linear swept high frequency signal;

a direct digital frequency synthesizer for receiving a direct digital synthesizer clock and generating a linear, frequency ramped sinusoid;

a phase/frequency detector for producing an error correction signal in response to the linear, frequency ramped sinusoid and the divided linear swept high frequency signal; and

a loop filter for filtering the error correction signal, the filtered error correction signal being coupled to the fine tune port of the high frequency tunable oscillator.

5. (New) The high frequency sweep generator of claim 4 wherein the direct digital frequency synthesizer is operated in a frequency shift keying mode, where an increment is changed by a fixed amount each direct digital synthesizer clock cycle for accumulation to address a sinusoid lookup table.

6. (New) A method of generating a linear swept high frequency signal using a high frequency tunable oscillator having a coarse tune port and a fine tune port comprising:

digitally generating a controllable linear ramp sweep signal for coupling to the coarse tune port of the high frequency tunable oscillator;

dividing the linear swept high frequency signal;

generating a linear, frequency ramped sinusoid using a direct digital frequency synthesizer, the direct digital frequency synthesizer receiving a direct digital synthesizer clock;

producing an error correction signal in response to the linear, frequency ramped sinusoid and the divided linear swept high frequency signal; and

filtering the error correction signal, the filtered error correction signal being coupled to the fine tune port of the high frequency tunable oscillator.

7. (New) The method of claim 6 wherein the generating step further comprises operating the direct digital frequency synthesizer in a frequency shift keying mode, where an increment is changed by a fixed amount each direct digital synthesizer clock cycle for accumulation to address a sinusoid lookup table